

Question Paper

Portfolio Management and Mutual Funds-II (252): January 2006

Section D : Case Study (50 Marks)

- This section consists of questions with serial number 1 - 5.
- Answer all questions.
- Marks are indicated against each question.
- Do not spend more than 80 - 90 minutes on Section D.

Case Study

Read the case carefully and answer the following questions:

1. In case of Kotak Fund of Fund, Systematic Investment Plan (SIP) is available during continuous offer. What are the possible advantages of SIP?

(8 marks) < [Answer](#) >

2. a. If the proportions of returns explained by the returns of market (NSE Nifty) for Kotak 30 Fund, HDFC Equity Fund and Principal Growth Fund are 58.25%, 60% and 60.36% respectively, rank the three schemes based on Treynor's and Sharpe's ratio using the data furnished in **Appendix** and also comment on the findings.

b. Calculate the Fama's measure of selectivity and net-selectivity for the three schemes.

(9 + 6 = 15 marks) < [Answer](#) >

3. Calculate the excess return per unit of downside semi-deviation for Kotak FOF, considering an appropriate benchmark index.

(8 marks) < [Answer](#) >

4. If Kotak FOF forms with only three schemes of Kotak 30, HDFC Equity and Principal Growth with the similar proportion of holdings for the entire portfolio as on September 30, 2005, what changes do you observe in average return, standard deviation, alpha, beta and coefficient of determination?

(6 + 6 = 12 marks) < [Answer](#) >

5. Fund of funds is a mutual fund that does not invest directly into equity or debt market; instead it invests in other mutual fund schemes. Explain why the investment in FOF is advisable.

(7 marks) < [Answer](#) >

Kotak Equity FOF offers the gains from investing in several top-performing equity schemes without the inconveniences of managing the portfolio. Kotak Equity FOF is a Fund of Funds that invests primarily in diversified equity schemes (both large-cap and aggressive) from across mutual fund houses in India. Thus, it is a single-asset class multi-manager Fund of Funds.

Through Kotak Equity FOF, investments are diversified across equity schemes. Kotak Equity FOF provides tax efficiency and load efficiency. One can administer an entire portfolio of equity schemes through just one folio with the minimum investment of Rs.5,000.

INVESTMENT OBJECTIVE

To generate long-term capital appreciation from a portfolio created by investing

predominantly in open-ended diversified equity schemes of Mutual Funds registered with SEBI.

INVESTMENT PATTERN

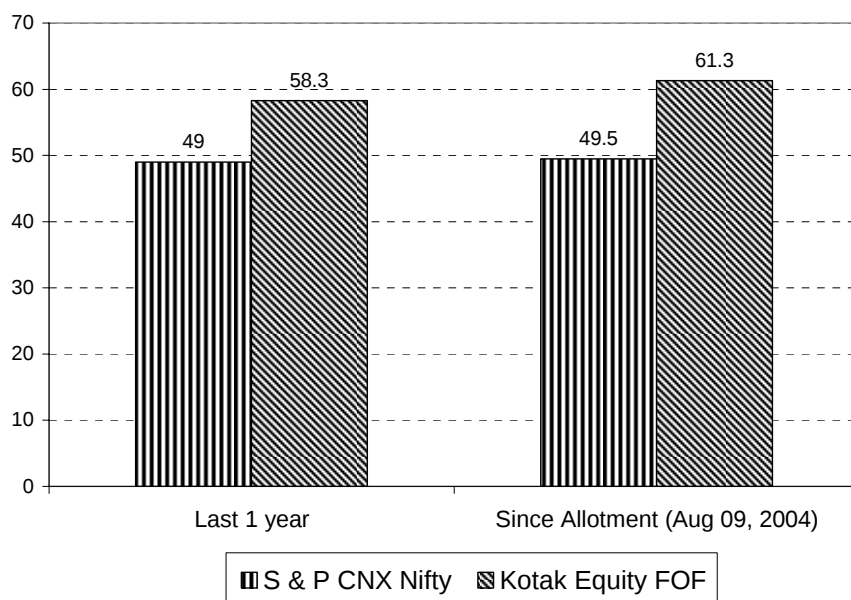
90% to 100% in Open-Ended Diversified Equity Schemes 0% to 10% in Inter bank Call and/or reverse repo and/or short-term fixed deposits and/or schemes, which invest predominantly in the money market or floating rate securities.

HIGHLIGHTS

- India's First Multi - Manager Equity Fund Of Fund Schemes
- Convenience & Simplicity in managing a portfolio of Best - of - Breed Equity Schemes
- Tax Efficiency (No tax liability for investors when the scheme rebalances its portfolio; investors tax liability is only upon exit from Kotak Equity FOF)
- Redemption on all Working Days
- Systematic Investment Plan available during continuous offer

Comparison of KOTAK Equity FOF Performance with S&P CNX Nifty

	Return (%)	
	Kotak Equity FOF	S & P CNX Nifty
Since date of allotment (Aug-09-04)	61.3	49.5
Last 1 year	58.3	49.0
Past performance may or may not be sustained in future.		



PORTFOLIO as on 30-Sept-2005

Issuer / Instrument	Industry/Rating	% to
---------------------	-----------------	------

		Net Assets
Mutual Fund Units- Public/Unlisted		
Kotak 30 Growth	Diversified Scheme Equity	24.79%
HDFC Equity Fund - Growth	Diversified Scheme Equity	16.55%
Principal Growth Fund - Growth	Diversified Scheme Equity	16.32%
Prudential ICICI Power Plan - Growth	Diversified Scheme Equity	16.28%
HDFC Growth Fund - Growth	Diversified Scheme Equity	8.19%
Birla Midcap Fund - Growth	Diversified Scheme Equity	8.02%
Franklin India Prima Fund - Growth	Diversified Scheme Equity	7.92%
Kotak Liquid Institutional Premium Growth Option	Short Term Debt Scheme	0.01%
Net Current Assets/(Liabilities)		1.92%
Total		100.00%

Total NPAs Provided for and Percentage to NAV : NIL

Total Value and Percentage to Net Asset of Liquid Equity Shares: NIL

Appendix

Date	Kotak 30 Growth Fund (Rs.)	HDFC Equity Fund (Rs.)	Principal Growth Fund (Rs.)	Kotak Equity FOF (Rs.)	NSE Nifty	BSE NATEX
30-SEP-05	44.179	31.3820	34.86	17.266	2601.4	4566.63
31-AUG-05	40.73	29.1150	32.91	16.202	2384.65	4184.83
29-JUL-05	37.514	27.2560	30.86	15.081	2312.3	4072.15
30-JUN-05	33.646	25.4990	27.89	13.711	2220.6	3800.24
31-MAY-05	32.882	25.4740	28.13	13.656	2087.55	3601.73
29-APR-	30.673	23.8580	26.02	12.803	1902.5	3313.45

05						
31-MAR-05	32.122	24.1700	27.11	13.17	2035.65	3481.86
28-FEB-05	33.431	24.7790	27.88	13.541	2103.25	3611.90
31-JAN-05	31.781	23.7410	26.89	12.937	2057.6	3521.71
31-DEC-04	31.86	24.0420	27.41	13.157	2080.5	3580.34
30-NOV-04	28.22	21.6220	25.02	11.994	1958.8	3339.75
29-OCT-04	26.096	19.5200	22.48	10.944	1786.9	3027.96
30-SEP-04	26.104	19.3170	21.96	10.906	1745.5	2997.97

Treasury Bills are trading at the rate of 6% p.a in the market.

END OF SECTION D

Section E : Caselets (50 Marks)

- This section consists of questions with serial number 6 - 11.
- Answer **all** questions.
- Marks are indicated against each question.
- Do not spend more than 80 - 90 minutes on Section E.

Caselet 1

Read the caselet carefully and answer the following questions:

6. According to the caselet, fixed income money managers are increasingly using futures particularly in duration management, hedging and arbitraging. Discuss how bond futures are used in these three situations.

(10 marks) [< Answer >](#)

7. According to the caselet, despite all the advantages and uses of futures, the reluctance of some investors to utilise them remains. Explain the possible reasons for the same.

(7 marks) [< Answer >](#)

Today, turnover in financial futures, and specifically in government bond futures, has been increasing with greater liquidity, faster price discovery and finer trading spreads than that available in the physical government bond market. Bond futures are in every way, therefore, a central and essential part of the world's fixed income debt markets. Professional and institutional investors with fixed income portfolios therefore need to understand all aspects of

how they operate. It is therefore interesting that acceptance of bond futures as a suitable and useful investment tool for their investment operations is still not universal among fixed income investors. Many conservative investors still refrain from permitting the use of bond futures in their portfolio management operations.

Even investors who do not use futures themselves can use the information contained within the market. The futures market provides early and essential information for fixed income portfolio managers, and an understanding of how the futures market works, how it reacts to news, and how it interacts with the cash markets will stand the investor in good stead. Beyond this, however, there are a number of uses of futures, which are particularly suited to the sophisticated fixed income portfolio manager.

A fixed income portfolio typically includes a core holding of securities, which have been selected to passively replicate the major characteristics of a particular benchmark. As a result the turnover of these holdings is usually fairly infrequent, given that rebalancing of most fixed income benchmarks takes place on monthly basis. The implementation of active positions on a portfolio can however uncover a series of complications if a portfolio is 'constrained solely to the use of physical bonds. Not only will the purchase or sale of discrete cash bonds change the portfolio's profile, perhaps moving it away from passive replication of the benchmark, but also individual bonds have their own characteristics (liquidity, marginal richness or cheapness to 'the theoretical curve, even availability in the case of some bonds), which can affect the prices obtained on trading them.

The advantages of using interest rate futures to express active investment views instead of cash bonds are manifold. Liquidity is assured, and the futures market prices much more finely with fewer anomalously rich or cheap securities. Also, and importantly, the underlying cash bond portfolio is not disturbed, and so the passive replication of the benchmark can be maintained. As a result, fixed income money managers are increasingly using futures to take on positions, particularly positions in duration management, hedging and the exploitation of arbitrage opportunities against underlying bonds. Despite all the advantages and uses of futures, the reluctance of some investors to utilise them remains.

Caselet 2

Read the caselet carefully and answer the following questions:

8. According to the caselet, bonds are often denoted as risk-free investments. However, this notion may not always hold good. Explain the possible risks associated with the bond investment.

(7 marks) < Answer >

9. What are the important macro economic factors to be considered for the investment in debt funds? Briefly explain the impact of the same on the performance of debt funds for the last few years and the recent measures taken by the government to control the same.

(7 marks) < Answer >

Debt funds have lost their importance in recent times due to the spike in the yields in debt markets. On an average, every year, returns from debt funds ranged between 1-5%, therefore, if inflation was taken into consideration the real return turned negative. Though the markets are skeptical about the fate of debt funds, there is a challenge to provide adequate returns in the future and retain investors in these schemes.

Debt funds are mutual fund schemes that invest their entire corpus in government securities, corporate bonds and other money market instruments with the prime objective of providing

steady returns in the short run and capital appreciation over the long term. However, in practicality, the asset management companies keep an option of investing a maximum of 10% or 25% of their corpus in equity stocks, so as to generate more returns for investors in the short run. One of the major advantages of debt funds is that the capital invested is virtually risk free, i.e., risk averse investors, who are scared of their capital being eroded elsewhere, can freely invest in debt funds with stable and almost fixed returns over the investment period.

There are investors who still park their surplus funds in a savings bank deposit or in a fixed deposit account that offers a fixed rate of interest with the principal being redeemed on maturity. Instead of putting their fund in bank deposits, which now currently offer very low interest, it is always recommended that investments be made in debt funds. Some investors are of the view that mutual fund investments carry huge default risk and, therefore, wind up their business and exit the market.

When a fund invests in debt instruments, the issue of the securities offers periodic returns (as the case may be) and the principal amount on the maturity. These returns are then passed on to the mutual fund investors in the form of dividends or are retained depending on the nature of the schemes. The issuers of these securities could either be the government or corporates, who float their bonds to fund their major expansion programs.

According to the Association of Mutual Funds in India (AMFI) statistics, the Assets Under Management (AUM) for income funds came down to Rs. 49,887 cr in June 2005 from Rs. 65,591 cr in September, 2004. The AUM for liquid and money market mutual funds came down to Rs. 60,875 cr from Rs. 62,982 cr in September 2004. For the same period, the AUM of the growth funds went up to Rs. 42,461 cr from Rs. 25,610 cr. From the above data it can be concluded that money has started moving out of income funds into equity and equity-oriented funds. Though the return on debt fund is low compared to equity funds and most debt funds perform poorly in the past few years, investors of these funds can still make substantial returns by selecting the right funds at the right time.

Caselet 3

Read the caselet carefully and answer the following questions:

- 10.** According to you, what are the various factors to be considered before making a decision to invest in an MF NFO?

(9 marks) < [Answer](#) >

- 11.** According to the caselet, for an equity fund investor, it is absolutely crucial to know when to sell rather than knowing when to buy. What are the possible situations, wherein one may require to take sell decision?

(10 marks) < [Answer](#) >

The most often heard three-letter acronym in the mutual fund business and its biggest draw is all set to walk into the sunset. The market watchdog - SEBI (Securities and Exchange Board of India) has objected in no uncertain terms to the practice adopted by mutual funds to term their new offering as 'IPOs' (initial public offerings). They believe this usage clashes with stock IPOs and confuses investors.

Till the last three months, secondary market in equity was in the midst of a historic time period. It created new highs practically every other day. Investors made huge profits. The mutual funds were also, accordingly, giving spectacular returns.

In such a scenario it is but natural for the euphoria to pass on to the primary market. While on one hand more and more companies are coming out with IPOs or additional offers, mutual funds too have not lagged behind in coming out with New Fund Offers, NFO, with increasing regularity. And predictably enough, these issues have generated huge interest amongst the investors and raised thousands of crore. In fact investors have redeemed from a well performing existing fund to invest an NFO with similar objectives. Primary issues in an equity market are a different subject matter in itself.

However, as regards the NFOs from Mutual Funds, there is a need to critically examine the same. Mutual Fund NFOs are nothing but commencement of a new scheme. They should not be confused with equity IPO and hence one should not expect a huge listing gain akin to one.

There are two important decisions that required to be made in relation to any investment. The first one is when to buy and the second is when to sell. There is generally a lot of information available about when and how to buy but not much is written or said about when to sell. For an equity fund investor, it is absolutely crucial to know when to sell rather than knowing when to buy. There are always some issues that one has to tackle while making a decision to sell.

If you look at your portfolio today, you might find that some of the funds are doing well and some are not doing so well. In fact, it is quite natural to have this situation at any point of time. A situation like this might prompt you to take an impulsive decision. However, before taking any decision to sell, it is important to look beyond performance. There are certain factors like quality of portfolio, consistency and asset profile that needs to be looked at. There can be certain other situations that might require you to act and get rid of some of the funds in your portfolio.

END OF SECTION E

END OF QUESTION PAPER

Suggested Answers

Portfolio Management and Mutual Funds-II (252): January 2006

Section D : Case Study

1. 1. Affordable to small investors

Given that average per capital income of an Indian is approximately only Rs 25,000 (i.e. monthly income of Rs 2,083), a Rs 5,000 one-time entry in a mutual fund is still asking for a lot (2.4 times the monthly income!). And mutual funds were never meant to be elitist; far from it, the retail investor is as much a part of the mutual fund target audience as the next high networth investor (HNI). So if you cannot shell out Rs 5,000, that's not a huge stumbling block, take the SIP route and trigger your mutual fund investment with as low as Rs 500 (in most cases).

2. Makes market timing irrelevant

If market lows give you the jitters and make you wish you had never invested in equity markets, then SIPs can help you blunt that depression. Most retail investors are not experts on stocks and are even more out-of-sorts with stock market oscillations. But that does not necessarily make stocks a loss-making investment proposition. Studies have repeatedly highlighted the ability of stocks to outperform other asset classes (debt, gold, property) over the long-term (at least 5 years) as also to effectively counter inflation. So if stocks are such a great thing, why are so many investors complaining? It's because they either got the stock wrong or the timing wrong. Both these problems can be solved through an SIP in a mutual fund with a steady track record.

3. Helps build for the future

Most of us have needs that involve significant amounts of money, like children's education and marriage, buying a house or a car. If you had to save for these milestones overnight or even a couple of years in advance, you are unlikely to meet your objective. But if you start saving a small amount every month/quarter through SIPs that is treated as sacred and that is set aside for some purpose.

4. Compounds returns

The early bird gets the worm is not just a part of the jungle folklore. Even the 'early' investor gets a lion's share of the investment booty vis-à-vis the investor who comes in later. This is mainly due to a thumb rule of finance called 'compounding'. According to a study by Principal Mutual Fund if Investor Early and Investor Late begin investing Rs 1,000 monthly in a balanced fund (50:50 – equity:debt) at 25 years and 30 years of age respectively, Investor Early will build a corpus of Rs 8 m (Rs 80 lakhs) at 60 years, which is twice the corpus of Rs.4 m that Investor Late will accumulate. A gap of 5 only years results in a doubling of the investment corpus! That is why SIPs should become an investment habit. SIPs run over a period of time (decided by you) and help you avail of compounding.

5. Lowers the average cost

SIPs work better as opposed to one-time investing. This is because of rupee-cost averaging. Under rupee-cost averaging an investor typically buys more of a mutual fund unit when prices are low. On the other hand, he will buy fewer mutual fund units when prices are high. This is a good discipline since it forces the investor to commit cash at market lows, when

other investors around him are wary and exiting the market. Investors may even be pleased when prices fall because the fixed rupee investment would now fetch more units.

[< TOP >](#)

2. a. Sharpe's ratio and Treynor's ratio for the three schemes can be calculated as follows:

	Monthly returns (%) on Kotak 30-(K)	Monthly returns (%) on HDFC Equity- [H]	Monthly returns (%) on Principal Growth- (P)	Monthly returns (%) on NSE Nifty (N)	$K - \bar{K}$	$H - \bar{H}$	$P - \bar{P}$	$N - \bar{N}$	$(K - \bar{K})^2$	$(H - \bar{H})^2$	$(P - \bar{P})^2$	$(N - \bar{N})^2$
Oct 04					-	-	-					
Nov 04	-0.03	1.05	2.37	2.37	4.66	3.18	1.69	-1.13	21.74	10.10	2.86	1.28
Dec 04	8.14	10.77	11.30	9.62	3.51	6.54	7.24	6.12	12.30	42.76	52.43	37.44
Jan 05	12.90	11.19	9.55	6.21	8.27	6.96	5.49	2.71	68.33	48.48	30.19	7.35
Feb 05	-0.25	-1.25	-1.90	-1.10	4.88	5.48	5.95	-4.60	23.82	30.04	35.46	21.18
Mar 05	5.19	4.37	3.68	2.22	0.56	0.14	0.38	-1.28	0.31	0.02	0.14	1.65
Apr 05	-3.92	-2.46	-2.76	-3.21	8.55	6.69	6.82	-6.72	73.06	44.72	46.51	45.10
May 05	-4.51	-1.29	-4.02	-6.54	9.14	5.52	8.08	10.04	83.60	30.47	65.26	100.85
Jun 05	7.20	6.77	8.11	9.73	2.57	2.54	4.05	6.23	6.60	6.47	16.41	38.76
Jul 05	2.32	0.10	-0.85	6.37	2.31	4.13	4.91	2.87	5.33	17.07	24.12	8.25
Aug 05	11.50	6.89	10.65	4.13	6.86	2.66	6.59	0.63	47.11	7.08	43.44	0.39
Sep 05	8.57	6.82	6.64	3.13	3.94	2.59	2.59	-0.37	15.53	6.71	6.68	0.14
Total	55.59	50.75	48.69	42.02					372.45	256.59	327.00	293.60
Average Return (%)	4.63	4.23	4.06	3.50								
Variance of Returns (%) ²	33.86	23.33	29.73	26.69								
Standard Deviation (%)	5.82	4.83	5.45	5.17								

Beta of Kotak-30 Fund (β_K)

$$R^2_K = (\beta_K^2 \times \sigma_N^2) / \sigma_K^2$$

$$(\beta_K^2 \times 26.69) / 33.86 = 0.5825$$

$$\beta_K^2 = 0.74$$

$$\beta_K = 0.86$$

Beta of HDFC Growth (β_H)

$$(\beta_H^2 \times 26.69) / 23.33 = 0.60$$

$$\beta_H^2 = 0.5245$$

$$\beta_H = 0.72$$

Beta of Principal Growth (β_p)

$$(\beta_p^2 \times 26.69) / 29.73 = 0.6036$$

$$\beta_p^2 = 0.6724$$

$$\beta_p = 0.82$$

The results can be summarized as follows:

	Average Return (%)	Standard Deviation (%)	Beta (β)
Kotak	4.63	5.82	0.86
HDFC Equity	4.23	4.83	0.72
Principal growth	4.06	5.45	0.82
NSE Nifty	3.5	5.17	1

$$\text{Treynor's ratio} = \frac{R_p - R_f}{\beta_p} \quad \text{and} \quad \text{Sharpe's ratio} = \frac{R_p - R_f}{\sigma_p}$$

$$\text{Monthly } R_f = (1.06)^{1/12} - 1 = 0.487\%$$

Scheme	Sharpe's Ratio	Rank	Treynor's Ratio	Rank
A. Kotak 30	$\frac{4.63 - 0.487}{5.82} = 0.712$	II	$\frac{4.63 - 0.487}{0.86} = 4.82$	II
B. HDFC Equity	$\frac{4.23 - 0.487}{4.83} = 0.775$	I	$\frac{4.23 - 0.487}{0.72} = 5.2$	I
C. Principal Growth	$\frac{4.06 - 0.487}{5.45} = 0.655$	III	$\frac{4.06 - 0.487}{0.82} = 4.36$	III

As can be seen in the table above there is no conflict in ranking in case of Kotak 30, HDFC Equity and Principal Growth. It is because Sharpe's ratio takes standard deviation as a measure of risk whereas Treynor's ratio takes beta or systematic risk as a measure of risk. In a fully diversified portfolio total risk and systematic risk will be equal and there will be no ranking conflict.

[< TOP >](#)

b. Fama's measure of selectivity and net selectivity for the three schemes can be calculated as follows:

According to Fama,

$$\text{Required return } (R_r) \text{ on a portfolio} = R_f + \beta_p(R_m - R_f)$$

$$\text{Total selectivity} = R_i - R_r$$

$$\text{Net selectivity} = R_i - \left[R_f + (R_m - R_f) \frac{\sigma_i}{\sigma_m} \right]$$

$$\text{Return for inadequate diversification} = \text{Total selectivity} - \text{Net Selectivity}$$

	Average Return (%)	Standard Deviation (%)	Beta (β)
Kotak 30	4.63	5.82	0.86
HDFC Equity	4.23	4.83	0.72
Principal Growth	4.06	5.45	0.82
NSE Nifty	3.5	5.17	1

A. Kotak 30

Substituting the values given in the table, we get

$$\text{Required return } (K_r) = 0.487 + 0.86 (3.5 - 0.487) = 3.08\%$$

$$\text{Total selectivity} = K - K_r = 4.63 - 3.08 = 1.55\%$$

$$\text{Net selectivity} = 4.63 - \left[0.487 + (3.5 - 0.487) \times \frac{5.82}{5.17} \right] = 0.75\%$$

$$\begin{aligned} \text{Return from inadequate diversification} \\ = 1.55\% - 0.75\% = 0.8\% \end{aligned}$$

B. HDFC Equity

$$\text{Required return } (H_r) = 0.487 + 0.72 (3.5 - 0.487) = 2.66\%$$

$$\text{Total selectivity} = H - H_r = 4.23 - 2.66 = 1.57\%$$

$$\text{Net selectivity} = 4.23 - \left[0.487 + (3.5 - 0.487) \times \frac{4.83}{5.17} \right] = 0.93\%$$

$$\text{Return from inadequate diversification} = 1.57 - 0.93 = 0.64\%$$

C. Principal Growth

$$\text{Required return } (P_r) = 0.487 + 0.82(3.5 - 0.487) = 2.96\%$$

$$\text{Total selectivity} = P - P_r = 4.06 - 2.96 = 1.1\%$$

$$\text{Net selectivity} = 4.06 - \left[0.487 + (3.5 - 0.487) \times \frac{5.45}{5.17} \right] = 0.39565\% \sim 0.4\%$$

$$\text{Return from inadequate diversification} = 1.1 - 0.4 = 0.7\%.$$

[< TOP >](#)

3. Since FOF includes number of schemes, which again include number of stocks NATEX, (broader index) is considered.

Kotak FOF

Month	FOF NAV (Rs.)	F (%)	$(F - \bar{F})$	$(F - \bar{F})^2$	BSE Natex	B(%)	$(B - \bar{B})$	$(B - \bar{B})^2$	$(F - \bar{F})(B - \bar{B})$
Sep 04	10.906				2997.97				
Oct 04	10.944	0.35	-3.67	13.44	3027.96	1.00	-2.69	7.22	9.85
Nov 04	11.994	9.59	5.58	0	3339.75	10.30	6.61	43.69	36.89
Dec 04	13.157	9.70	5.68	0	3580.34	7.20	3.52	12.37	19.98
Jan 05	12.937	-1.67	-5.69	32.38	3521.71	-1.64	-5.32	28.35	30.28
Feb 05	13.541	4.67	0.65	0	3611.9	2.56	-1.13	1.27	-0.74
Mar 05	13.17	-2.74	-6.75	45.56	3481.86	-3.60	-7.29	53.11	49.22
Apr 05	12.803	-2.79	-6.80	46.24	3313.45	-4.84	-8.52	72.66	57.97
May 05	13.656	6.66	2.65	0	3601.73	8.70	5.01	25.13	13.28

Jun 05	13.711	0.40	-3.61	13.03	3800.24	5.51	1.82	3.33	-6.59
Jul 05	15.081	9.99	5.98	0	4072.15	7.16	3.47	12.03	20.73
Aug 05	16.202	7.43	3.42	0	4184.83	2.77	-0.92	0.85	-3.15
Sep 05	17.266	6.57	2.55	0	4566.63	9.12	5.44	29.55	13.88
Total		48.17		150.65		44.24		289.55	241.60
Average		4.01				3.69		26.32	21.96
S.D								5.13	

$$\text{Semi-deviation} = \sqrt{\frac{(F - \bar{F})^2}{n-1}} = \sqrt{\frac{150.65}{11}} = 3.70\%$$

$$\text{Beta of FOF} = \text{CovFB}/\text{VarB} = 21.96/26.32 = 0.83$$

$$\text{Excess Return} = [F - R_f + \beta_F(R_m - R_f)]$$

$$= [4.01 - 0.487 + 0.83(3.69 - 0.487)] = 0.8645\% \sim 0.86\%$$

$$\text{Excess return to semi-deviation} = 0.86/3.7 = 0.23$$

[< TOP >](#)

4. Considering the portfolio of Kotak FOF as on September 30 2005

Month	NAV of Kotak FOF (Rs.)	Return (%)	$(F - \bar{F})$	$(F - \bar{F})^2$	$N - \bar{N}$	$(F - \bar{F})(N - \bar{N})$
Sep 04	10.906					
Oct 04	10.944	0.35	-3.67	13.44	-1.13	4.14
Nov 04	11.994	9.59	5.58	31.14	6.12	34.14
Dec 04	13.157	9.70	5.68	32.29	2.71	15.41
Jan 05	12.937	-1.67	-5.69	32.33	-4.60	26.17
Feb 05	13.541	4.67	0.65	0.43	-1.28	-0.84
Mar 05	13.17	-2.74	-6.75	45.61	-6.72	45.35
Apr 05	12.803	-2.79	-6.80	46.25	-10.04	68.29
May 05	13.656	6.66	2.65	7.02	6.23	16.49
Jun 05	13.711	0.40	-3.61	13.04	2.87	-10.37
Jul 05	15.081	9.99	5.98	35.74	0.63	3.76
Aug 05	16.202	7.43	3.42	11.69	-0.37	-1.27
Sep 05	17.266	6.57	2.55	6.52	5.59	14.27
		48.17		275.49		215.53
		4.01		25.04		
				5.00		

$$\text{Cov}_{FM} = 215.53/11 = 19.59$$

$$\beta_F = 19.59/26.69 = 0.73$$

$$\alpha = R_i - (R_f + (R_m - R_f) \beta) = 4.01 - [0.487 + 0.73(3.5 - 0.487)] = 1.32\%$$

$$\text{Coefficient of determination} = (\beta_F^2 \times \sigma_N^2) / \sigma_F^2 = 14.22 / 25.04 = 0.5679$$

Considering that FOF is formed only with first 3 schemes with the similar holdings as are on

September 30, 2005

Proportion of investment

$$\text{Kotak 30} = 24.79 / (24.79 + 16.55 + 16.32) \times 100 = 0.4299 = 0.43 = 43\%$$

$$\text{HDFC Equity} = 16.55 / (24.79 + 16.55 + 16.32) \times 100 = 0.287 = 28.7\%$$

$$\text{Principal growth} = 16.32 / (24.79 + 16.55 + 16.32) \times 100 = 0.283 = 28.3\%$$

$$\text{Portfolio Return} = W_K R_K + W_H R_H + W_P R_P = 0.43 \times 4.63 + 0.287 \times 4.23 + 0.283 \times 4.06 = 4.35\%$$

$$\beta = W_K \times \beta_K + W_H \times \beta_H + W_P \times \beta_P = 0.43 \times 0.86 + 0.287 \times 0.72 + 0.283 \times 0.82 = 0.81$$

$$\alpha = 4.35 - [0.487 + 0.81 (3.5 - 0.487)] = 1.42\%$$

Covariances:

Month	(K - $\bar{K}$)	(H - $\bar{H}$)	(P - $\bar{P}$)	(K - $\bar{K}$) (H - $\bar{H}$)	(H - $\bar{H}$) (P - $\bar{P}$)	(P - $\bar{P}$) (K - $\bar{K}$)
Oct 04	-4.66	-3.18	-1.69	14.82	5.37	7.88
Nov 04	3.51	6.54	7.24	22.93	47.35	25.39
Dec 04	8.27	6.96	5.49	57.56	38.26	45.42
Jan 05	-4.88	-5.48	-5.95	26.75	32.64	29.06
Feb 05	0.56	0.14	-0.38	0.08	-0.05	-0.21
Mar 05	-8.55	-6.69	-6.82	57.16	45.60	58.29
Apr 05	-9.14	-5.52	-8.08	50.47	44.60	73.86
May 05	2.57	2.54	4.05	6.54	10.31	10.41
Jun 05	-2.31	-4.13	-4.91	9.54	20.29	11.34
Jul 05	6.86	2.66	6.59	18.27	17.54	45.24
Aug 05	3.94	2.59	2.59	10.21	6.70	10.19
Sep 05	3.84	3.56	1.87	13.64	6.64	7.16
Total				287.97	275.24	324.04
Co- variance = (Total/11)				26.18	25.02	29.46

$$\begin{aligned} \sigma^2 &= W_K^2 \sigma_K^2 + W_H^2 \sigma_H^2 + W_P^2 \sigma_P^2 + 2W_K W_H \text{Cov}_{KH} + 2W_H W_P \text{Cov}_{HP} + 2W_K W_P \text{Cov}_{KP} \\ &= 0.43^2 \times 5.82^2 + 0.287^2 \times 4.83^2 + 0.283^2 \times 5.452^2 + 2 \times 0.43 \times 0.287 \times 26.18 + 2 \times 0.287 \times 0.283 \times 25.02 + 2 \times 0.283 \times 0.43 \times 29.46 \\ &= 28.26 \end{aligned}$$

$$\sigma = 5.32$$

$$\text{Systematic Risk} = 0.81^2 \times 26.69 = 17.51$$

$$\text{Coefficient of determination} = 17.51 / 28.26 = 0.6197 \sim 0.62$$

As per	Return	SD	Alpha	Beta	Coefficient of Determination
Original Kotak FOF	4.01	5	1.31	0.73	0.5679
New Proportion	4.35	5.32	1.42	0.81	0.62

Alternatively

Month	K	H	P	NF ($0.43 \times K$ + $0.287 \times H$ + $0.283 \times P$)	NF - $\bar{NF}$	(NF - $\bar{NF}$) ²	(NF - $\bar{NF}$)(N - $\bar{N}$)
Sep 04							
Oct 04	-0.03	1.05	2.37	0.96	-3.40	11.53	3.84
Nov 04	8.14	10.77	11.30	9.79	5.43	29.53	33.25
Dec 04	12.90	11.19	9.55	11.46	7.11	50.52	19.27
Jan 05	-0.25	-1.25	-1.90	-1.00	-5.36	28.70	24.65
Feb 05	5.19	4.37	3.68	4.53	0.18	0.03	-0.22
Mar 05	-3.92	-2.46	-2.76	-3.17	-7.52	56.62	50.53
Apr 05	-4.51	-1.29	-4.02	-3.45	-7.80	60.87	78.35
May 05	7.20	6.77	8.11	7.34	2.98	8.89	18.56
Jun 05	2.32	0.10	-0.85	0.79	-3.57	12.73	-10.25
Jul 05	11.50	6.89	10.65	9.93	5.58	31.14	3.51
Aug 05	8.57	6.82	6.64	7.52	3.17	10.05	-1.18
Sep 05	8.47	7.79	5.93	7.55	3.20	10.23	17.87
				52.25		310.84	238.18
				4.35		28.26	Cov=21.65
						5.32	

$$\beta_{NF} = \text{COV}_{NF\&N} / \sigma_N^2 = 21.65 / 26.69 = 0.81$$

$$\text{Coefficient of determination} = (\beta^2 \times \sigma_N^2) / \sigma_{NF}^2 = (0.81^2 \times 26.69) / 28.26 = 0.6196 \sim 0.62$$

$$\text{Alpha} = NF - [R_f + \beta (R_m - R_f)] = 4.35 - [0.487 + 0.81(3.5 - 0.487)] = 1.42$$

As per	Return	SD	Alpha	Beta	Coefficient of Determination
Original Kotak FOF	4.01	5	1.31	0.73	0.5679
New Proportion	4.35	5.32	1.42	0.81	0.62

Note: Here, Kotak FOF includes only three schemes, Nifty is considered as benchmark.

[< TOP >](#)

5. 1. Advisory

Investing in FOF is like being given periodic investment advice, and having it implemented without having to lift a finger! Agency of the fund does the background research and selects schemes to invest in, and rebalance the portfolio, so that investment is diversified across top performers. So that one can sit back and relax, knowing that it's all taken care of.

2. Convenience

Instead of managing a portfolio of schemes, take a convenient route: invest in one scheme that in turn invests in several. Get administrative simplicity: a single account statement, and purchases/redemptions on a single folio, and monitor performance easily.

3. Multi-management

It provides benefit of diversifying investments across fund houses and fund manager styles. So that one can have a team of experts managing one's money. Since, money is put to different managers, managers risk, which prevails in case of single scheme, is also diversified.

4. Tax Superiority

Usually it is easier and more tax-efficient for investors to invest in FOF than to invest directly in multiple schemes and rebalance the portfolios.

This is because FOFs are tax-exempt. Investors in Equity FOF can incur capital gains taxes only when they exit the FOF, not when the FOF rebalances its portfolio.

5. Load Benefits

In case of Equity FOFs offered by few mutual fund schemes, they will invest only in underlying schemes with no entry or exit Load, or where such loads are waived. Hence rebalancing the portfolio will not attract fresh loads to take away from investible corpus. This may not be the case if one invests directly and rebalances one's portfolio oneself.

6. Small Minimum Investment

The minimum you need to invest is fairly low, compared to investing directly in several schemes on your own.

[< TOP >](#)

Section E: Caselets

Caselet 1

6. In **duration management** futures are used to manage the duration of a portfolio in situations where active deviations from benchmark neutral duration are desired. A manager may for example be of the opinion that interest rates are likely to fall and consequently wish to increase the duration of his portfolio. This is achieved by simply purchasing the required number of futures contracts and placing an appropriate amount of "initial margin", usually a fraction of the nominal size of the trade, with the clearing broker. If he wants to increase the duration of the portfolio using physical bonds, he has to fund the purchase of the additional bonds, thereby incurring additional transaction costs and at the same time he has to alter the structure of the bond portfolio. The purpose of **hedging** is simply to partially or totally reduce the interest rate sensitivity of a bond or portfolio. At the portfolio level a manager can either sell the bonds that are contributing to the undesired exposure, or hedge this exposure by selling futures. However, in selling cash bonds, the portfolio manager is limited to the actual holdings in his portfolio; this can mean multiple sales if the portfolio has many small positions, and may also be disadvantageous if he wants to retain these physical bonds. By selling futures, the portfolio manager is not simply limited to the

portfolio's existing holdings. Instead the number of futures contracts required is calculated by dividing the price sensitivity of the exposure to be hedged by the price sensitivity of the futures contract, or futures risk, and then a sale order is simply placed for this amount, regardless of the portfolio's current holdings.

In **arbitraging**, the portfolio manager is trying to take advantage of the pricing differential between the futures price and deliverable bond price. This is known as the basis, and it is determined by the difference between the futures price and the forward price of the underlying bond. The forward price of a bond is simply the spot price of the bond plus the cost of carry, where the cost of carry is defined as the cost of financing less the accrued income on the bond to the forward date. Futures prices differ from forward prices in that the short futures position holder has the option to deliver whichever of the bonds in the deliverable basket he chooses, sometimes at the time of his choice. Given the additional benefits conferred upon the short position holder, these 'delivery options' have the effect of reducing "the futures price below that of the theoretical forward price, the difference of which is known as the 'net basis'. There are a number of factors that drive how far the futures price will deviate from the theoretical forward price, but arbitrageurs may be able to exploit this difference and lock in a superior return to that available in the market.

[< TOP >](#)

7. Firstly, the reasons for the reluctance of using futures is the extra complexity of the settlement and accounting, with initial margin and daily variation margin payments. Secondly, there are concerns over the risk control of futures positions. History contains a number of cases where inadequate control of futures trading, has caused problems, and the ability to leverage a portfolio using futures concerns many would be investors. Futures do require different risk controls, simply because of their ease of use and the ability to go short, but competent risk control and management packages exist and by using them, futures positions can be fully integrated into the other risk control processes for the portfolio.

Perhaps a bigger concern for institutional investors is the reputational risk of losses incurred through trading in futures. It sometimes seems that the reputational risk to an investor of a loss caused by trading in futures is more serious than that suffered through more traditional investment management, even if the loss itself is no larger. This is primarily a matter of education, but until there is wider public understanding of the role of futures, it remains a barrier in some investors' eyes to the full acceptance of futures as legitimate tools for fixed income asset management.

[< TOP >](#)

Caselet 2

- 8 Bonds carry risks in the form of credit risk, interest rate risk, prepayment risks, inflation risks, etc.

Credit risk: Credit risk is risk due to uncertainty in the ability of the issuer (counter party) to meet its obligations. Companies may go bankrupt or default on their debts for extended periods.

Interest rate risk: Interest rate risk is the risk that interest rates will rise and reduce the value of an investment.

Prepayment risk: Prepayment risk is the risk that falling interest rates will lead to prepayment of investment and forcing the investor to invest at lower rates. In other words, certain bonds carry a call feature that may enable early redemption. This is known as prepayment risk. This happens when firms issue high interest-carrying bonds and the market rate falls considerably after a few

years. So, they call on the older bonds and replace them with new low-cost ones. Though, it is better than not being paid back at all, the investors has to bear the opportunity cost. However, the investor sometimes prefers callable bonds when he anticipates the interest rates to rise before his bond matures.

Inflation risk: Inflation risk is the possibility that the value of assets or income will decrease as inflation shrinks the purchasing power of investment.

[< TOP >](#)

9. The rising interest rate and inflation are the biggest concerns for those who invest in debt funds. The period between 2000 and 2002 was the best period for debt funds, because interest rates dropped regularly and allowed debt investors to generate returns by investing in long-term bonds and gilt funds. But after 2003, the interest rate turned northwards and the popularity of debt funds as investment alternatives started slipping. The one-year average returns of most debt-oriented schemes range from 4.5 to 5.5%, as compared to equity and equity-oriented mutual funds returns, which ranged from 15-75% during the same period. Only some debt-oriented mutual funds are able to provide two digit returns. The yield on debts funds has an upward trend during the year, as investors are worried about rising inflation and interest rates. Given the above scenario, the NAV of various mutual funds will deteriorate over a period.

In the recent past, the government took appropriate measures and successfully maintained the inflation level at 5 to 6% as compared to the highest level of 8.7% in the month of August 2004. In the recent monetary policy, the government has taken major steps to lure the people to invest in debt funds by increasing the reverse repo rate, the bank rate and keeping the cash reserve ratio unchanged. By introducing this measure, the government has taken an initiative to prevent any further rise in inflation. But the oil price, which has touched the \$63 mark as on July 6, 2005, can create inflationary pressure and worsen the situation for the investors of debt funds.

[< TOP >](#)

Caselet 3

10. Quality of the portfolio

It is the portfolio, which determines the returns one can expect from a scheme and hence it is, important to give emphasis to the portfolio. This is of course not known for an NFO. Therefore, to judge how the scheme is likely to perform in future one need to look at:

- • The fund manager's past track record and
- • The performance of the other similar funds being managed by that AMC.

Of the two, the AMC's performance is more important because the AMC's research teams' recommendations and the investment philosophy of the AMC ultimately guide the fund managers to invest. Moreover, even if a fund manager were to quit, a good AMC would be able find another competent fund manager.

Anything 'NEW'

Ideally the new fund should have something different to offer. Or at least it should be a new scheme launched by an AMC you are comfortable with. For example, when Standard Chartered launched a normal diversified equity fund, when a 100 other similar funds were available, one could have considered the same for investing, as it was the first diversified equity fund from

Standard Chartered. JM Equity and Derivative Fund, Benchmark Split Capital Fund, a few Fund of Funds etc. are some of the examples of new concepts.

Therefore, unless something different is offered it may be prudent to invest in fund which already has a track record, you are aware of its' portfolio, its' investment philosophy, its' expenses, etc.

Matching your investment objective

We invest with some objective. Also, we all have our own individualistic risk profile. It is, therefore, important to look at the NFO from these two perspectives – does it meet our investment objective and our risk profile.

The 'cost' of issue expenses

Marketing a new issue entails substantial expenses for the AMC floating the issue—on ads, road shows, offer documents, the incentives to distributors, among other things. Under Sebi rules, mutual funds can charge up to 6% of NFO collections as marketing expenses to the scheme. These expenses are written off from the NAV over a period of 5 years. Considering the amounts NFOs have raised these expenses are quite substantial. All these costs go to reduce your NAV. In an existing scheme, especially those more than 5 years old, these expenses would have been written off. Therefore, all things remaining same, the net returns from an NFO would be lower to the extent it has to write-off the issue expenses, vis-à-vis an existing scheme.

[< TOP >](#)

11. There can be certain situations that might require you to act and get rid of some of the funds in your portfolio.

Poor performance

This reason for selling, although valid in certain conditions, is where most investors make a mistake. Before making a decision to sell on the basis of poor performance, it is necessary to put performance in perspective. In other words, you need to consider relative performance and not absolute performance alone. For example, if your fund is down 3%, while other funds are up 3%, it is very tempting to shift to one of the better performing funds. However, if you consider too short period for this purpose, it can boomerang. Besides, to consider relative performance, it is necessary to compare your fund to its peers. For example, if your fund is a well diversified fund, you need to compare it with other diversified funds.

Change in fund's style or objective

It is always important to remember your original reason for buying a fund. If you invested in a diversified fund investing primarily in large cap stocks at that time, but you notice that it is investing in mid-caps now, then you should consider selling the fund. Similarly, if you own some stocks and the fund that you are invested in also have considerable exposure in those, you may consider divesting from the mutual fund or the stocks, depending on situation of your overall portfolio.

Change in your situation

If you are at a different stage of your life, it might become necessary to sell some your investments in MF. For example, as the retirement age approaches, you may want to shift your money to more conservative funds.

Change of fund manager

A change of fund manager may make you nervous and force you to consider selling your investments in that particular fund. However, it is important not to react immediately after the

change. Instead, keeping a track of any variation in terms of performance and style might help in taking the right decision. If the style of the new fund manager is completely in contrast to the earlier one and the fund house does not seem to be doing anything about it, it makes sense to come out.

You need the money

Sometimes, there will be circumstances in your life when you must sell your investments. It is important to weigh out alternatives to selling your investments because it could make a difference in the long run. You may consider taking a loan, if it is available at lower than your expected return on your investments.

Fund does not fit your risk profile anymore

As we all know that investing in a sector fund can be riskier than investing in a well-diversified fund. If you find that a particular sector fund has become volatile, then it makes sense to get rid of it.

If you decide to sell, consider doing it gradually. All of us know that systematic investing is the best way for investing. It is also important to know that selling gradually also ensures certain benefits. Remember, selling some of the funds can save you money. Don't forget, you invest to make money and not to make losses.

[< TOP >](#)

[< TOP OF THE DOCUMENT >](#)